

STATE ROUTE



District 6

Transportation Concept Report

Office of System Planning

April 2005



Approval Recommended:

A handwritten signature in black ink, appearing to read "D. Alan McCuen".

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	Pages
Location Map	i
Transportation Concept Report for State Route 178	
I. Introduction	1
II. Route Description and Purpose	2-4
III. Segment Map text (Pg 5), Map (Pg 6)	5-6
IV. Geometrics, Land Use, and Environmental Considerations	7-10
V. Concept Rationale	10-11
VI. Summary Chart text (Pg 11), Charts (1-A, 1-B, 2-A, 2-B)	11-15
VII. A Review of Route 58 Performance: Current and Future	16-18
VIII. Planned and Programmed Improvements to Route 178	18-21
Appendix	A-1 - A-12
References	A-1
Glossary	A-2 - A-8
Intelligent Transportation Systems	A-9 - A-10
Transit Services and Bicycle Facilities	A-11 - A-12

Transportation Concept Report

State Route 178

April 2005

I. INTRODUCTION

The Transportation Concept Report (TCR) is a long-range system-planning document that establishes a planning concept for the corridor through the year 2030. The TCR provides route data and information, as well as current and projected (years 2005, 2015, and 2030 respectively) operating characteristics.

Considering reasonable financial and physical constraints, the TCR defines the appropriate Concept Level of Service (Concept LOS) and facility type(s) for each route. It also broadly identifies the nature and extent of improvements needed to attain the Concept LOS. Capacity-enhancing improvements, such as lane additions, are the primary focus for LOS attainment.

Caltrans endeavors to maintain a target LOS at the transition between LOS C and LOS D on State highway facilities, or whichever LOS is feasible to attain. For the purpose of this document, however, the Concept LOS is a “target” LOS determined by the importance of the route and environmental factors. A deficiency (need for improvement) is triggered when the actual LOS falls below the Concept LOS.

The TCR also identifies transit, and the deployment of Intelligent Transportation Systems (ITS) as integral to route corridor development.

However, operational improvements, such as intersection modifications, are discussed as interim measures. The TCR also identifies transit, notably the High Speed

Passenger Rail System, and the deployment of Intelligent Transportation Systems (ITS) as integral to route corridor development. The Ultimate Transportation Corridor (UTC), as identified in this TCR, ensures that adequate right-of-way (ROW) is preserved for ultimate facility projects beyond 2030.

However, the UTC does not consider funding as a constraint. Caltrans District 6 System Planning staff should be consulted for the interim ROW (prior to ultimate construction) for a specific location along the corridor.

This document identifies the initial and conceptual planning phase that leads to subsequent programming and the project development process. Consequently, the specific nature of proposed improvements such as roadway width, number of lanes, and access control might change in later project development stages. Final determinations are normally made during the project report and design phases.

Therefore, a TCR is a “living document,” subject to amendments as conditions change and projects are completed. System Planning staff will update the TCR on a three-to-five year cycle or as needed. The TCR for State Route (SR) 178 was prepared and completed by District 6 Office of System Planning staff in cooperation with local and regional agencies and other Caltrans functional units.

As such, the TCR will serve as a guide in cooperative planning and implementation of transportation and land use decisions.

II. ROUTE DESCRIPTION AND PURPOSE

Begins: At Route 99/58/178 Junction in Bakersfield in Kern County

Ends: At the Nevada State line

Length: 208-mile highway in Kern, San Bernardino, and Inyo Counties

The route is located in Caltrans' Districts 6, 8, and 9, which include Kern, San Bernardino, and Inyo Counties. This Transportation Concept Report covers the 58 miles of SR 178, from the SR 99/58/178 junction in Bakersfield to Kelso Valley Road (near Weldon) in Kern County. The segment from Weldon to the San Bernardino County line is not covered in this TCR since it is maintained by District 9 Maintenance and Operations. At the beginning of the document (Location Map, page "i") is a map showing the location of Route 178 covered by this TCR.

Land Use: The east-west route begins in the urban area of Bakersfield. This portion of the route includes commercial and residential development in a rapidly growing area. In the rural area, the route primarily serves recreational traffic to Lake Isabella and other points in the Kern River Canyon. Small communities are situated in the mountainous regions.

Terrain: Generally on flat terrain in and near the urban area, with mountainous terrain from the mouth of the Kern River Canyon and into the Sequoia National Forest in Kern County.

A. Modal Alternatives

Transit Services: Both fixed-route and dial-a-ride buses serve the local traveler in Kern County. Common transit carriers include Greyhound Bus Lines, Orange Belt Stages, the Airport Bus of Bakersfield, and the Amtrak bus. Golden Empire Transit is the local transit carrier within Bakersfield.

Kern Regional Transit operates along the "Bakersfield to Lake Isabella" corridor. Kern River Valley Fixed Route and Dial-a-Ride serves the communities of Lake Isabella, Onyx, and Kernville.



The Golden Empire Transit (GET) operates fixed routes within Bakersfield, which includes travel on Route 178.

For a segment by segment list of specific transit providers, please see the Transit Services chart in the Appendix, located at the end of this TCR.

Amtrak Rail: Currently, there are six Amtrak San Joaquin passenger rail trains that pass through District 6 on a daily basis. The San Joaquin Route Amtrak train has station connections in Bakersfield, Wasco, Corcoran, Hanford, Fresno, and Madera. Amtrak Thruway bus service is available in Bakersfield and Hanford. The Thruway bus service connects with the train in order for the passenger to reach their final destination on a non-train route.

High Speed Rail: The California High Speed Rail Authority has developed the California High Speed Rail Business Plan to build a high-speed rail line generally parallel to and west of Route 99, from Los Angeles to San Francisco. The plan describes a 700-mile long high-speed train system capable of speeds of 200 miles per hour.

The system would serve the major metropolitan centers of California. In 2020, it is projected to carry 32 million intercity passengers annually, transport another 10 million commuters, and would generate nearly \$900 million in revenue.

Bicycle Routes/Pedestrian Access:

SR 178 contains highway segments that are both open and closed to bicycle and pedestrian travel. For the most part, all non-freeway segments of this highway are open for bicycling and walking. However, while many segments are open they often lack adequate shoulders, such as the narrow Kern River Canyon. Bicycle traffic is therefore not recommended on these narrow segments. Future plans call for upgrading numerous segments of this highway.

Please refer to the "Bicycle Routes/Pedestrian Access" section of the Appendix, located at the end of this report for more detailed information.

B. Intelligent Transportation Systems



Call Boxes located along SR 178 are one aspect of the ITS network provided to motorists in Kern County.

Numerous applications of Intelligent Transportation Systems exist or are proposed throughout the extent of State Route 178. Operational and safety efficiency will be enhanced by the deployment of Intelligent Transportation System technology. Current ITS applications along the facility include weather stations, changeable message signs, and highway advisory radio.

The Caltrans Central Valley Transportation Management Center (TMC) monitors specific traffic locations from its headquarters at the

District Office in Fresno. For more specific segment by segment information, see the ITS chart in the Appendix.

C. Highway Facts

- * In 1919, Route 178, formerly known as Route 57, was added to the State Highway System. The section from Route 99 to the San Bernardino County line was added to the California Freeway and Expressway System in 1959.
- * On April 27, 1960, Route 178 was adopted on a new alignment (currently unconstructed) between west of Morning Drive to SR 155 at Lake Isabella. The adopted alignment lies northerly of existing Route 178 and generally follows Rancheria Road until it reaches the Lake Isabella area.
- * In District 6, Route 178 is functionally classified as a high volume Principal Arterial within Bakersfield and a low volume Minor Arterial for the remainder of its length. Route 178 serves as a significant route for urban commuters in Bakersfield.

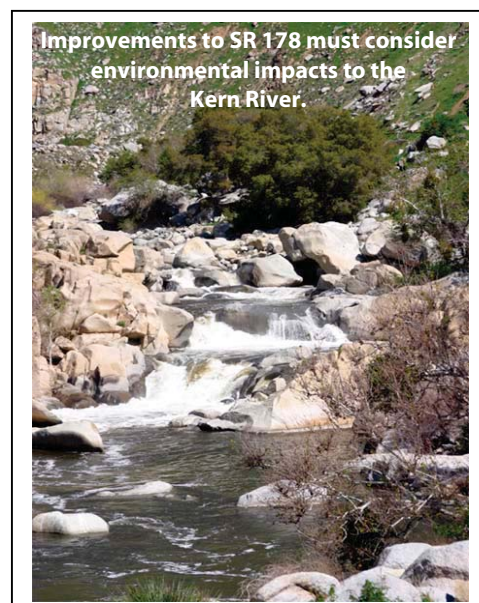
- * Route 178 is important as a Trans-Sierra route providing access to Lake Isabella and the Sequoia National Park. Recreational travelers use the route mainly on weekends and holidays. The Annual Average Daily Traffic (AADT) ranges from 3,800 to 59,000, with trucks constituting up to 8 percent of the AADT.
- * A proposed realignment for the Route 178 Freeway is part of the Metro Bakersfield 2010 General Plan Circulation Element.
- * A portion of Route 178 between Rancheria Road and Kelso Valley Road near Weldon (Segments 7-15) is included as a part of the Interregional Road System in District 6.
- * Route 178 is known as the Kern River Canyon Road from the mouth of the Kern Canyon to Route 155.
- * Tractor-semi-trailer combinations are limited to the National Network (Federal- Surface Transportation Assistance Act or STAA Network) and its Terminal Access (State-STAA Network) routes by a combination of length, kingpin to rear axle limit (KPRA) and the number of axles. Road signs have been posted identifying Terminal Access routes, KPRA Advisory routes, and routes with special restrictions. Route 178 has the following designations within District 6:
 - This route is designated as a State Highway Terminal Access Route for larger trucks under the STAA from the SR 99/58/178 interchange (PM 0.0) to near the mouth of Kern Canyon (PM 13.7).
 - From the mouth of the Kern Canyon (PM 13.7) to Kern River Canyon Road, Route 178 (PM 30.0) is designated as an KPRA Advisory route, which restricts KPRA lengths on the route.
 - A California Legal designation (40-foot KPRA) exists from 20 miles east of the Route 184 junction (PM 30.0) to Chimney Creek Road (PM 70.7).

D. General Environmental Considerations

Specific sensitive biological species include, but are not limited to, the following flora and fauna:

FLORA-wetland areas, Bakersfield cactus, California Jewel Flower, Kern Mallow, Alkali Mariposa lily plants, San Joaquin Woollythreads; FAUNA-San Joaquin kit fox, giant kangaroo rat, Tipton kangaroo rat, blunt-nosed leopard lizard, burrowing owl, Kern Canyon salamander, and migratory birds.

In addition, there are historical and archeological sites that will need to be investigated. Geologic considerations need to be identified in the mountainous area of the route. Environmental considerations to improvements include the Kern River, several canals, and archeological sites that exist along the route.



III. Segment Map

On the following page is an 11"x17" foldout TCR Segment Map for Route 178. This map shows the 15 segments of SR 178 in Kern County.

Following the Segment Map is Section IV, which provides an overview of Route 178 geometrics (including segment detail maps), land use and environmental considerations. The overview is split into three segment groups. See the four-page Summary Chart in Section VI. for additional information in table form.

See the following page for the 11"x17" TCR Segment Map.



IV. Geometrics, Land Use, and Environmental Considerations

Segments 1-5: North JCT Route 99/58 SEP to Route 184 in Bakersfield

Begins: At Route 99/58/178 SEP

Ends: At Route 184



Land Use: Bakersfield's downtown area includes a mix of commercial and residential development.

Facility: Route 178 consists of a 4-lane conventional highway from Route 99 to B Street. The route consists of two one-way couplets from B Street to M Street, a 6-lane conventional highway.

Each of the one-way roads (23rd and 24th Streets) constituting the one-way couplet has three lanes. The facility is a 6-lane freeway for about 4.5 miles between M Street and approximately 0.6 miles east of Oswell Street, and a 2-lane conventional highway to Route 184.

Interchanges and other intersections with State highways:

- * Interchange connections with State Route 99 (west to east): direct link with the north junction of Route 58 (locally known as Rosedale Highway) for westbound traffic.
- * Commuters use the Route 99 /58/178 West interchange and Route 99 as the linkage to Route 58 East, located south of the interchange. The linkage issue has been a critical unresolved issue for regional traffic through Bakersfield.
- * An interchange connection is proposed at Oak Street (PM 0.0/1.1, KP0.0/1.8).
- * Route 178 has an interchange with the North Junction of Route 204 (PM R2.0, KP3.2).
- * An interchange connection is at Oswell Street (PM 5.6, KP 9.0).

- * An interchange proposed at Fairfax Road (PM R6.1/R7.5, KP R9.8/12.1) is under design and expected to be constructed by 2008.
- * Route 178 intersects city streets through Bakersfield. A majority of the intersected streets are signalized.
- * An interchange connection is proposed at Morning Drive (proposed realigned Route 184).
- * Route 178 intersects with Route 184 (PM T9.61, KP T15.4).



Environmental/Historical Resources: Environmental concerns would range from the impacts of ROW acquisition, noise, and landscape removal in the urban areas. Route 178 traverses a primarily commercial area bordered by residential neighborhoods that contain many potentially historic homes and buildings. The San Joaquin kit fox is known to den in the Route 99/58/178 Interchange area. Context sensitive solutions must be considered in all improvements to the route.

Segments 6-10: Route 184 to 3.4 Mi (5.44 KM) east of the China Garden Road

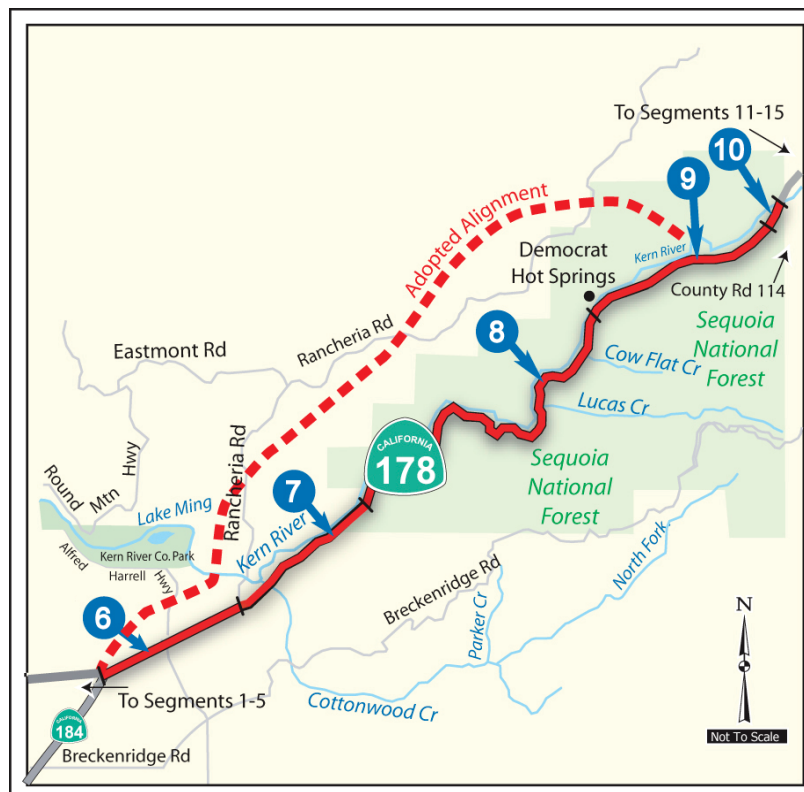
Begins: At Route 184

Ends: At 3.4 Mi (5.44 KM) east of the China Garden Road

Land Use: Segments 6-10 begins with an urban segment with sprawling residential development toward the remaining rural segments.

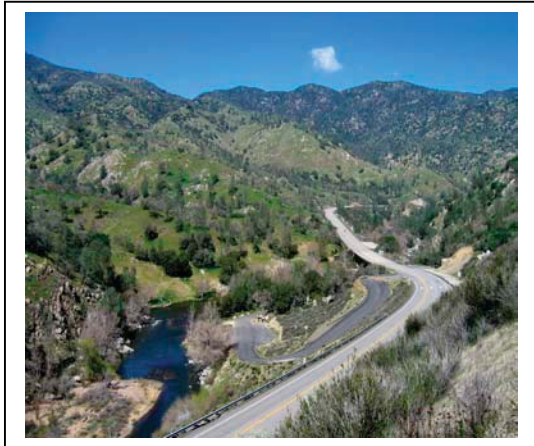
Route 178 traverses the mouth of the Kern River Canyon to the Sequoia National Park.

Facility: The highway is a 2-lane conventional highway (PM 9.6) to 2.6 miles west of Democrat Road within the Sequoia National Forest. The Route travels through a geologically unstable area.



Within Segments 8-10, the Kern River Canyon Road includes rock and boulder formations along the route with limited shoulders. Segments 9 and 10 are comprised of both a 2-lane conventional highway and a 4-lane expressway.

Through recent discussions with Bakersfield there is serious consideration of relocating a portion of Route 178 to the adopted alignment.



SR 178 is comprised of both a 2-lane conventional highway and a 4-lane expressway in the Kern River Canyon.

The proposal consists of relocating that portion between west of proposed Vineland Avenue to east of the intersection of Rancheria Road, utilizing an interim connection back to existing Route 178 near the mouth of the Kern River Canyon.

Interchanges and other intersections with State highways:

Route 178 intersects with Route 184 (PM T9.61, KP T15.4).

Route 178 intersects with Rancheria Road, Democrat Springs Road, and China Garden Road.

Environmental/Historical Resources: From east of Oswell Street to the mouth of the Kern

Canyon the primary environmental issue is endangered species, primarily the kit fox and the Bakersfield cactus.

Issues include archaeological sites, water, and sensitive resources near the Kern River. Geological issues are a primary concern in and near the Sequoia National Forest Boundary.

ROW acquisitions and preservation are important route adoption issues for the new alignment. ROW acquisition may be cost prohibitive and environmentally significant. The Edison powerhouse complex near Sidehill Viaduct is eligible for the National Historic Register.

Segments 11-15: 3.4 miles (5.44 KM) east of the China Garden Road to Kelso Valley Road

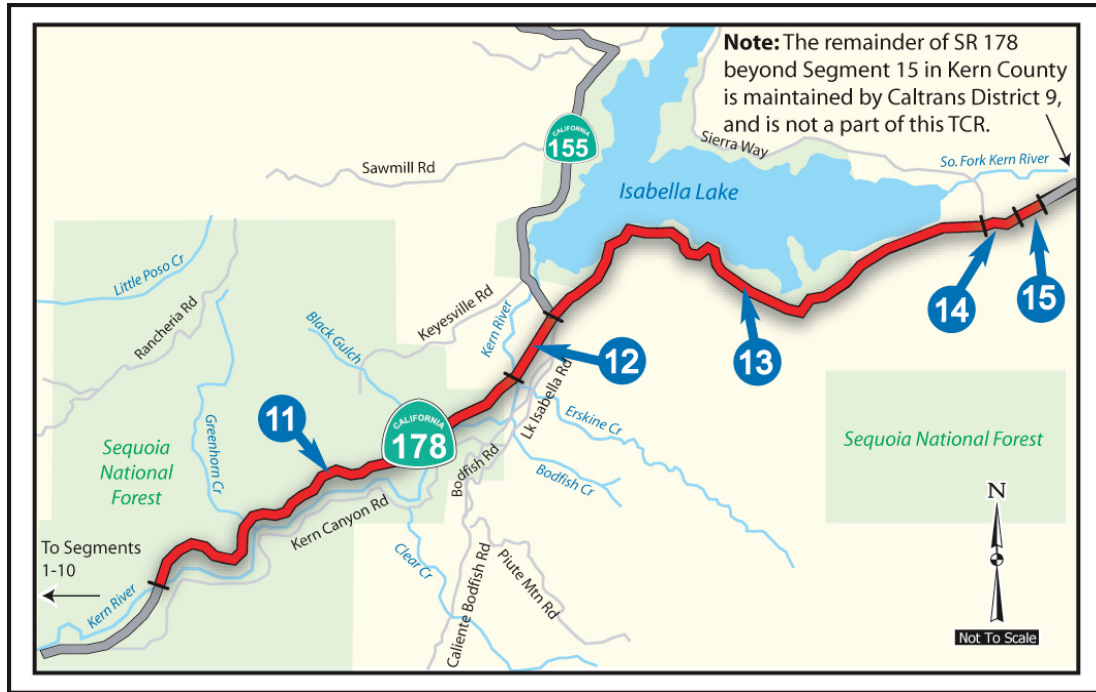
Begins: At 3.4 miles (5.44 KM) east of the China Garden Road

Ends: At Kelso Valley Road.

Land Use: Segments 11-15 traverse through recreational areas associated with the Lake Isabella Reservoir, as well as the communities of Bodfish, Lake Isabella, Mountain Mesa, and South Lake. A major point of interest is the Sequoia National Forest.



Any future improvements to this section of SR 178 will consider environmental issues related to the Lake Isabella recreation area and reservoir.



Facility: The route begins with a 4-lane expressway in Segment 11 and a 4-lane freeway in Segment 12. Segments 13-15 consist of a 2-lane conventional highway to Kelso Valley Road.

Interchanges and other intersections with State highways:

- Interchange connection is at Bodfish Road.
- Interchange connection is at Route 155.
- Intersects with Sierra Way and Kelso Road.

Environmental/Historical Resources: Issues include several recreation areas associated with the Lake Isabella reservoir and several archeological sites. Riparian concerns consist of the Kern River, canals and creeks. Context sensitive solutions must be considered for the communities of Mountain Mesa and South Lake. Right-of-way acquisition for future projects may be cost prohibitive and environmentally significant.

V. Concept Rationale

Route Concept LOS:

Rural: LOS C as assigned to the rural portions of Route 178 since it is a major recreational route providing access to Lake Isabella and the Sequoia National Forest, while being cost effective for adopted alignment improvements in rolling to mountainous terrain.

Urban: LOS D was assigned to the urban areas due to the heavy traffic volumes from the interchange at SR 99/58/178, the geometric configurations of the couplets in the urban area, and the urbanized nature of these segments. LOS D signifies the greater LOS flexibility when capacity improvements are needed, particularly in Segments 1 and 2.

Concept Facility: The Concept Facility for SR 178 varies according to the facility type; the following list shows the facility for the year 2030, beginning with the segment at the Route 99/58/178 Interchange and proceeding eastward.

6-lane conventional highway (Segments 1 and 2): There will only be improvements for a 6-lane conventional highway in this section. The Centennial Freeway, a local east-west freeway, will cross Route 99 and connect to the existing urban freeway portion of Route 178, near Haley Street. The Centennial Freeway will provide local freeway circulation continuity.

6-lane freeway (Segments 3-6): While Segments 3 and 4 are existing freeway portions, Segments 5 and 6 are part of a new route adoption on which the freeway will be on new alignment. This will serve the Bakersfield area as it expands eastward.

2-lane conventional highway (improved)-(Segments 7 and 8): These are segments primarily within the Kern River Canyon. Only operational and safety improvements and safety are expected. The expressway on a new alignment around the Kern River Canyon is not expected to be built during the TCR period. A portion of Segment 7 may be expanded to a 4-lane freeway on an adopted 6-lane ROW (see discussion in the previous Section IV - Segments 6-10).

2 to 4-lane expressway/freeway (Segments 9-12): No other capacity improvements are expected on this stretch of highway.

2-lane conventional highway (improved)-(Segments 13-15): Only operational and safety improvements are expected on this stretch of highway.

The Ultimate Transportation Corridor (UTC-beyond 2030) in the Bakersfield metropolitan area (Segments 1-6) is essentially a 6 to 8-lane freeway, with the exception of the conventional highway of Segments 1 and 2. On the new alignment north of the Kern River Canyon to Route 155, the UTC will be a 4-lane expressway or freeway (Segments 7-12). In the Lake Isabella area, only a 2-lane conventional highway with operational and safety improvements is projected for the UTC (Segments 13-15).

VI. State Route 178 Transportation Concept Report Summary Chart

The 4-page Summary Chart following this section indicates that SR 178 is divided into 15 distinct segments that provide descriptive and technical information, both current and forecast, for the State highway. It also has a linear geographic diagram that illustrates the major State and local highway facilities, along with key natural features and City/County boundaries, current highway geometrics, i.e., conventional highway, expressway, and freeway. A "Chart Explanation" bar defines what is shown on the Chart with the exception of self-explanatory technical information. The Summary Chart also delineates functional classification, various highway designations, environmental information, and General Plan information.

See the following 4 pages for the Summary Chart.



VII. A Review of Route 178 Performance: Current and Future

As of the year 2005, Route 178 is operating at a range of LOS A in the rural area to LOS F in the urban area of Bakersfield. Nine of the 15 segments are currently operating at a LOS D or F. By the years 2015 and 2030, the LOS will deteriorate on all segments due to the growth of urban, recreational, and holiday travel on Route 178.

Thirteen of 15 segments will operate at an LOS D, E or F by the year 2030. Planned RIP (Regional Improvement Program) capacity improvements will improve the LOS level on some segments.

Without improvements, the Route Concept LOS will not be met in the majority of the segments by the year 2030. Segments 1-6 show a LOS F without improvements. By the year 2030, Segments 7-9 without improvements show an LOS D or E.

Segments 10 and 13-15 will most likely be at an LOS D or E by the year 2030. Segments 11 and 12 will likely maintain an acceptable LOS without improvements by the year 2030.

Poor highway operating conditions may be prevalent in Bakersfield at the SR 178/99/58 Interchange. Two future construction proposals may help to alleviate traffic congestion at the SR 178/99/58 Interchange and Route 178 at Segments 1 and 2.

Construction of the new Centennial Freeway will reduce traffic projections on Route 178. However, various improvements on the route will still be needed to accommodate the growth in traffic.

The other construction project is a candidate project at Oak Street/Route 178. This project consists of construction of a new interchange and widening Route 178 to a 6-lane conventional highway between SR 99

and D Street. The improvement to 6 lanes will not attain the Concept LOS of D; it will be at LOS F. In downtown Bakersfield, historical preservation, ROW costs and restrictions will be a consideration for facility improvements.

A route adoption and environmental study are planned for Route 178, beginning at Route 184 and traversing on a new alignment to the northeast at Rancheria Road. This is Phase 1 of 2, and it is proposed to be a 4-lane freeway, on right-of-way encompassing Segments 5 and 6.

The new freeway will not meet the Concept LOS D at an expected LOS E from Oswell Street to Route 184, but it will meet the Concept needs at LOS C from Route 184 to Rancheria Road. Plans exist for a temporary connection on the new route from Rancheria Road back to the present route.

Discussions are in progress to extend the freeway beyond Rancheria Road and then to connect back to the present route (Segment 7). Please refer to the discussion on page 7 in regard to Segments 6-10 and Segment Map 6-10. The City of Bakersfield has proposed a specific plan line for the new Route 178. The specific plan line will include future proposals for interchanges on the old and new freeway alignment.

Future interchanges will be located at Morning Drive, Vineland Road, SR 184, and Rancheria Road. Vineland Road is a proposed new road connection to Route 178 between Morning Drive and Route 184.

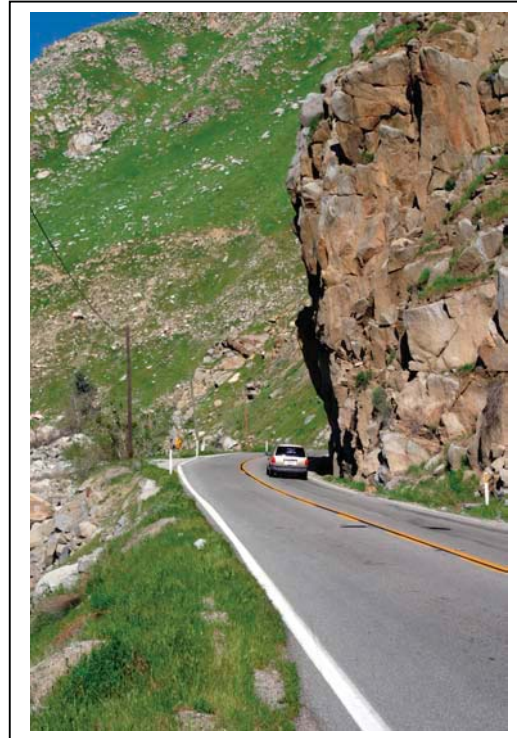
Caltrans is working on extending the Route 178 Freeway Agreement east to Masterson. Vineland will be the new north/south access route. ROW preservation is most important on the proposed corridor.

Residential development in the corridor and population increases will require transportation improvements in the near future.

In Phase 2, a decision and timeline on a new 4-lane expressway on new alignment, which proposes to traverse northerly around the Kern River Canyon to Lake Isabella, has not been resolved. It is expected to be an alternative for travel in the Canyon, but perhaps not within the 2030 time horizon.

Other operational problems exist from the mouth of the Kern River Canyon to the Sequoia National Forest. The highway travels through a geologically unstable area within the National Forest.

The Kern River Canyon Highway from approximately PM 13.7/30.6, KP 22.0/49.2 is narrow with little or no shoulders, many short radius curves, and a high degree of passing restrictions. The planned realignment of the route to the northeast of the present alignment will help to eliminate problems associated with travel in the Kern River Canyon area. Passing lanes and other safety improvements have been implemented in the Kern River Canyon.



Mountainous terrain along many segments on SR 178 make widening difficult.

In addition to the regular maintenance and periodic operations and safety improvements completed on Route 178 (State Highway Operations Protection Program or SHOPP projects), Caltrans will continue to work on ITS improvements, such as ramp metering, changeable message signs, highway advisory radio, and other strategies to more effectively sustain and improve traffic flow, particularly in the urbanized areas.

With the projected growth in statewide, interregional, and local commuter traffic, the congestion on Route 178 will continue to increase. Over the next 25 years and beyond, Caltrans and local agencies will continue to work on solving problems associated with the route.

New residential and commercial development in the urban and rural valley portion of the route will necessitate traffic congestion mitigation. Acquiring funding sources for Route 178 improvements will be a continuing challenge for all agencies. The Kern Council of Governments (Kern COG is the Metropolitan Planning Organization or MPO), City of Bakersfield, County of Kern, and local communities would need to determine how Route 178 should develop with available regional funding. Other than Regional Improvement Program funds, other funds such as local measure funds may be available for projects identified in the Regional Transportation Plan (RTP).

The Livable Communities and Context Sensitive Solutions concepts should be considered and possibly implemented in future design and construction of improvements to the Route 178

Corridor, particularly in the urban area. The execution of these concepts act to scale down the magnitude of its impact as well as increase the aesthetics of the system. Also, environmental justice should be considered in future development on Route 178. The environmental justice process will act to not overwhelm poor and minority communities in transportation planning.

In any case, Caltrans will need to continue emphasizing the further rehabilitation, operational, and capacity improvements of Route 178 due to its regional importance.

VIII. Planned and Programmed Improvements for Route 178

The following table show both the planned and programmed projects for Route 178 over the next 25 years. The planned projects include *candidate* projects for the STIP and SHOPP, or ITSP and RTP projects. The programmed projects include *actual* projects in the STIP, SHOPP that are partially or fully funded. STIP projects are primarily capacity-increasing, while SHOPP projects focus on maintenance, safety, and operational improvements.

The table shows:

1. The specific segment.
2. Route 178 Planned Projects-the listing document (RTP, ITSP, STIP Candidate, or SHOPP Candidate), description of the project, and known pertinent data.
3. Route 178 Programmed Projects-the listing document (STIP, SHOPP), description of the project, and projected begin and completed construction dates.

Project scope and technical data are for general informational purposes only. If current information is needed, please verify with the Caltrans District 6 Office of Advance Planning at (559) 445-5232		
Segment PM/KP From/To	SR 178 Planned Projects	SR 178 Programmed Projects
1 KERN PM 0.0/1.0 KP 0.0/1.6 RTE 99/58 SEP to B St	STIP Candidate: KER 178 PM 0.0/1.1, KP 0.0/1.8, Oak Street Operational Improvements: <i>Widen to 6-lanes and construct interchange at Oak Street (4C-6C) (Future)</i>	There are no projects currently programmed for this segment.
2 KERN PM 1.0-1.7 KP 1.6/2.7 B St to M St	There are no projects currently planned for this segment.	2002 SHOPP: KER 178 PM 1.6, KP 2.6 In Bakersfield at L Street: <i>Install signals and curb ramps</i> <i>Begin construction: 2003/2004</i> <i>Complete construction: 2004/2005</i>

Segment PM/KP From/To	SR 178 Planned Projects	SR 178 Programmed Projects
3 KERN PM 1.7/R4.1 KP R2.7/R6.6 M St to Haley St OC	SHOPP Candidate: KER 178 PM 1.8/6.1, KP 2.9/9.8 From 24th Street to 0.8 KM E of Oswell Rd: AC overlay (Future)	2000 SHOPP: KER 178 PM 1.7/R6.7, KP 2.7/10.8 In Kern County in and near Bakersfield from M St to 0.4 KM west of Fairfax Rd: Irrigation and planting upgrade <i>Begin construction: 2002/2003 Complete construction: 2005/2006</i>
4 KERN PM R4.1/R6.2 KP R6.6/R10.0 Haley St OC to 0.6 MI (0.97KM) E of Oswell St OC	SHOPP Candidate: KER 178 PM 1.8/6.1, KP 2.9/9.8 From 24th Street to 0.8 KM E of Oswell Rd: AC overlay (Future) STIP Candidate: KER 178 PM R4.8/R9.5, KP R7.7/15.28, From MT Vernon to RTE 184 JCT, Vineland exit: Amend Freeway Agreement (Future)	2000 STIP: : KER 178 PM R 6.1/7.5, KP 9.8/12.1 From 0.4 miles west of Oswell Street to 0.5 miles east of Fairfax Rd : Construct 4-lane freeway and interchange at Fairfax <i>Begin construction: 2006/2007 Complete construction: 2008/2009</i> 2002 SHOPP: KER 178 PM 1.7/6.7, KP 2.7/10.8 In Kern County in and near Bakersfield from M St to 0.4 KM west of Fairfax Rd: Irrigation and planting upgrade <i>Begin construction: 2002/2003 Complete construction: 2005/2006</i>
5 KERN PM R6.2/T9.6 KP R10.0/T15.4 0.6 MI (0.97 KM) E of OSWELL St OC to RTE 184	RTP, STIP Candidate: KER PM 8.7/30.4, KP 14/48.9 From Bakersfield to Lake Isabella: Route Adoption and environmental study on new alignment: (Future) STIP: KER 178 PM 6.1/7.5, KP 9.8/12.1 From 0.4 miles west of Oswell Street to 0.5 miles east of Fairfax Rd: Construct 4-lane freeway and interchange at Fairfax: (Future) STIP Candidate: KER 178 PM R4.8/R9.5, KP R7.7/15.28, From MT Vernon to RTE 184 JCT, Vineland exit: Amend Freeway Agreement (Future) STIP Candidate: KER 178 PM 7.2/8.2, KP 11.5/13.1 In the City of Bakersfield from 0.8 KM west to 0.8 KM east of Morning Drive: Construct new interchange at Morning Drive and extend 4-lane freeway(Future).	2000 STIP: KER 178 PM R6.1/R7.5, KP 9.8/12.1 In Bakersfield from 1.2 KM west to 1.2 KM east of Fairfax Rd: Construct interchange <i>Begin construction: 2006/2007 Complete construction: 2008/2009</i> 2000 SHOPP: KER 178 PM R6.3/R13.4, KP R10.1/R21.6 Near Bakersfield from 0.8 KM west of Fairfax Rd to mouth of the canyon: AC overlay and widening <i>Begin construction: 2006/2007 Complete construction: 2008/2009</i> 2002 SHOPP: KER 178 PM 1.7/6.7, KP 2.7/10.8 In Kern County in and near Bakersfield from M St to 0.4 KM west of Fairfax Rd: Irrigation and planting upgrade <i>Begin construction: 2002/2003 Complete construction: 2005/2006</i>

Segment PM/KP From/To	SR 178 Planned Projects	SR 178 Programmed Projects
6 KERN PM T9.6/R11.0 KP T15.4/R17.7 RTE 184 to Rancheria Rd	RTP, STIP Candidate: KER PM 8.7/30.4, KP 14/48.9 From Bakersfield to Lake Isabella: <i>Route Adoption and environmental study on new alignment (Future)</i>	2002 SHOPP: KER 178 PM R6.3/R13.4, KP R10.1/R21.6 Near Bakersfield from 0.8 KM west Fairfax Rd to mouth of the canyon: AC overlay and widening Begin construction 2006/2007 Complete construction: 2008/2009
7 KERN PM R11.0/13.7 KP R17.7/22.0 Rancheria Rd to Mouth of the Kern River Canyon	RTP, STIP: KER PM 8.7/30.4, KP 14/48.9 From Bakersfield to Lake Isabella: <i>Route Adoption and environmental study on new alignment (Future)</i>	2002 SHOPP: KER 178 PM R6.3/R13.4, KP R10.1/R21.6 Near Bakersfield from 0.8 KM west Fairfax Rd to mouth of the canyon: AC overlay and widening Begin construction: 2006/2007 Complete construction: 2008/2009
8 KERN PM 13.7/24.0 KP 22.0/38.6 Mouth of the Kern River Canyon to 2.6 MI (4.18 KM) W of Democrat Rd	RTP, STIP Candidate: KER PM 8.7/30.4, KP 14/48.9 From Bakersfield to Lake Isabella: <i>Route Adoption and environmental study on new alignment (Future)</i>	There are no projects currently programmed in this segment
9 KERN PM 24.0/R30.6 KP 38.6/R49.2 2.6 MI (4.18 KM) W of Democrat Rd to Sequoia National Forest Boundary	RTP, STIP Candidate: KER PM 8.7/30.4, KP 14/48.9 From Bakersfield to Lake Isabella: <i>Route Adoption and environmental study on new alignment (Future)</i>	There are no projects currently programmed in this segment
10 - 12 KERN PM R30.6/R31.7 KP49.2/51.0 Sequoia Natl Forest Boundary to R43.9 KP R66.3/R70.6 0.4 (0.64KM) MI W of Bodfish RD	There are no projects currently planned for Segments 10-12.	There are no projects currently programmed for Segments 10-12.

Segment PM/KP From/To	SR 178 Planned Projects	SR 178 Programmed Projects
13 KERN PM R43.9/55.7 KP R70.6/89.6 1.0 MI (1.6KM) E of SR 155 to Sierra Way	There are no projects currently planned for this segment.	<p>2002 SHOPP: KER 178 PM R45.5/47.7, KP 73.2/76.7 "100 meters west of Lake Isabella Boulevard," Launching area No. 16 intersection: <i>AC Overlay and widen to 32ft</i></p> <p><i>Begin construction: 2007/2008</i> <i>Complete construction: 2009/2010</i></p> <p>2006 SHOPP: KER 178 PM 52.6/57, KP 84.6/91.7 Near Lake Isabella from Entrada Blvd to Kelso Valley Rd: <i>AC overlay and widen shoulders</i></p> <p><i>Begin construction: 2005/2006</i> <i>Complete construction: 2008/2009</i></p>
14 KERN PM 55.7/56.7 KP 89.6/91.2 Sierra Way to 1.0 MI (1.6 KM) E of Sierra Way	There are no projects currently planned for this segment.	<p>2006 SHOPP: KER 178 PM 52.6/57, KP 84.6/91.7 Near Lake Isabella from Entrada Blvd to Kelso Valley Rd: <i>AC overlay and widen shoulders</i></p> <p><i>Begin construction: 2005/2006</i> <i>Complete construction: 2008/2009</i></p>
15 KERN PM 56.7/57.1 KP 91.2/91.9 1.0 MI (1.5) E of Sierra Way to Kelso Valley Rd	There are no projects currently planned for this segment.	<p>2006 SHOPP: KER 178 PM 52.6/57, KP 84.6/91.7 Near Lake Isabella from Entrada Blvd to Kelso Valley Rd: <i>AC overlay and widen shoulders</i></p> <p><i>Begin construction: 2005/2006</i> <i>Complete construction: 2008/2009</i></p>

Please see the Appendix for References, Glossary, and additional information on Intelligent Information Services (ITS), Transit, and Bicycle Facilities.